SWITCHING TO ECLIPSE IS ASSOCIATED WITH REDUCED INFLAMMATION IN THE LOWER RESPIRATORY TRACT OF HEAVY SMOKERS

Stephen I. Rennard, M.D., Takeshi Umino, M.D., Tajuddin Millatmal, M.D., David M. Daughton, M.S., Lidia S. Manouilova, M.D./Ph.D., Fred A. Ulrich, B.S., Kashinath D. Patil, Ph.D., Debra J. Romberger, M.D., Anthony A. Floreani, M.D., University of Nebraska Medical Center

Cigarette smoking is the major cause of chronic obstructive pulmonary disease. Smoking induced inflammation is thought to play an important pathogenetic role in both chronic bronchitis and emphysema. Reduction in exposure to smoke derived toxins might be a means to reduce lung inflammation. Eclipse is a cigarette which primarily heats tobacco rather than burning it, and as a result generates significantly less toxins. The current trial was designed to determine if switching to Eclipse was associated with a reduction in lower respiratory tract inflammation. Heavy smokers (≥40 cigarettes/day) who were free of lung disease and who did not wish to quit were enrolled underwent evaluation of lower respiratory tract inflammation by bronchoscopy before and after switching to Eclipse for 2 months. Eighteen subjects were enrolled and 13 completed both bronchoscopies. Eight non smoking subjects were studied once for comparison. In the smokers, there were no significant differences in exhaled CO, carboxyhemoglobin, serum cotinine or nicotine after switching ($p>0.2$ all comparisons). As expected, visual inspection revealed evidence of bronchial inflammation in the smokers which could be scored using a published index scoring system (Thompson et al. Chest 103:1482,1993) which was significantly greater than in non-smokers (7.4 ± 0.7 vs 2.5 ± 0.8 $p<0.001$). After switching, the bronchitis index, while still greater than normal had decreased significantly (4.0 ± 0.7 $p<0.005$). Also as expected cells recovered by bronchoalveolar lavage were significantly increased in the smokers (7.3 ± 1.3 x10^5 vs 2.2 ± 0.4 x10^5 cells/ml BAL fluid $p<0.001$) and also decreased significantly following switching to Eclipse (4.7 ± 0.5 x10^5 $p<0.01$). Thus, switching to Eclipse for two months can partially reduce the inflammation characteristically present in the lower respiratory tract of heavy smokers. Such a reduction might be associated with a reduced risk for developing lung disease.

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Corresponding author: Stephen I. Rennard, M.D.,
Department of Internal Medicine, University of Nebraska Medical Center, 600S 42nd Street, Omaha NE 68198-5300 USA

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